Department of Health and Human Services
Centers for Disease Control and Prevention
National Instititute for Occupational Safety and Health

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Principal Witness:
John Howard, MD
Director, National Instititute for Occupational Safety and Health

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Introduction

Good morning Mr. Chairman and other distinguished members of the Subcommittee. My name is John Howard, and I am the Director of the National Institute for Occupational Safety and Health (NIOSH), which is part of the Centers for Disease Control and Prevention (CDC), within the Department of Health and Human Services. I thank you for the opportunity to appear before you today to support the President's FY 2006 budget request of $285,930,000 for NIOSH.

NIOSH, which was established under the Occupational Safety and Health Act of 1970, and joined CDC in 1973, is responsible for helping to assure safe and healthful working conditions for workers by conducting research and making recommendations for the prevention of work-related injury and illness. Headquartered in Washington, DC, NIOSH has research laboratories and offices in Cincinnati, OH, Morgantown, WV, Pittsburgh, PA, Spokane, WA and Atlanta, GA. NIOSH is a professionally diverse organization with a staff of over 1,468 employees representing a wide range of disciplines including epidemiology, medicine, nursing, industrial hygiene, safety, psychology, engineering, chemistry, and statistics.

I am pleased to be here today with our sister agencies, the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA). Our agencies often work together toward the common goal of protecting worker safety and health. With complementary missions, our collaboration is essential to optimizing the impact of our work, and CDC's commitment to partnership is evident throughout our work in the Institute.

The capacity of CDC to protect the health and safety of our nation's workforce is critical and unique. CDC's scientists work in multidisciplinary teams to fund and

conduct research to identify and evaluate workplace hazards, develop and demonstrate solutions to protect workers from such hazards, and communicate the results of this research to employers, workers, and public and private organizations involved in improving the safety and health of workers. The Institute also supports training and education programs for occupational safety and health professionals, as well as capacity building in the states. Most importantly, CDC is committed to translating research findings into practical applications that can be utilized for the protection of our Nation's workforce.

Significant progress has been made in improving worker protection since Congress passed the OSH Act in 1970. This progress has been largely based on actions – sometimes voluntary, sometimes regulatory – directed by science and knowledge generated from occupational safety and health research. However, despite significant improvements in workplace safety and health over the last several decades, occupational injuries and illnesses continue to take an enormous toll on the nation's employers, workers and their families, and society overall. In 2002, 5,524 occupational fatalities occurred in the U.S.; and in 2003, 4.4 million non-fatal injuries and illnesses occurred in the private sector alone. The costs of most work-related illnesses and injuries are not solely borne by the respective employer, but spread across employers, employees and taxpayers through workers' compensation insurance, public and private health insurance, and public and private disability insurance. The Liberty Mutual 2004 Workplace Safety Index estimates that direct costs for occupational injuries in 2002 rose to $49.6 billion.

Jobs in our economy continue to shift from manufacturing to services and major changes are occurring in the way work is organized. Longer hours, compressed

workweeks, and shift work are realities of the modern workplace. New chemicals, materials, processes, and equipment are developed and marketed at an ever-accelerating pace. The workforce is also changing. As the U.S. workforce grows to approximately 162 million by year 2012, it has become older and more racially diverse. By the year 2012, minorities will represent about 35% and women about 48% of the workforce. These changes are accompanied by new issues, requiring new research and approaches to control hazards.

The critical role of CDC in addressing these challenges is reflected in the NIOSH's activities, outputs, and impacts, which are described in our three strategic goals:

1) Conduct research to reduce work-related illnesses and injuries;

2) Promote safe and health workplaces through interventions, recommendations and capacity building, and;

3) Enhance global workplace safety and health through international collaborations.

NIOSH is also supporting CDC's Futures Initiative goals management process by actively participating in the development of Healthy Workplaces goals for the agency. These goals will set priorities CDC-wide for occupational safety and health and workplace health promotion, including reduction in workplace fatalities, illnesses, and injuries, and integration of health promotion and work-related risk activities.

NIOSH Research

As the lead federal agency in occupational safety and health research, NIOSH strives to increase knowledge of workplace hazards and develop practical, preventative solutions. NIOSH targets its research to current areas of need viewed as having the

highest importance for the prevention of work-related injuries and diseases. In 1996, NIOSH and over 500 partners, including those from government, academia, industry and labor unions, established the National Occupational Research Agenda (NORA) – a framework to guide occupational safety and health research into the next decade. Since the development of the research agenda, NIOSH has shifted its focus and the vast majority of the Institutes' intramural and extramural research activities to address NORA priority areas.

In FY 2004, NORA funding totaled $97 million. As a result of this increased emphasis, the NIOSH research grant program moved from a success rate of 9% in 1997, to 16% in FY 2004. The increase in the success rate reflects the Institute's ability to fund a larger percentage of the grant applications that are received and reviewed. New knowledge generated from this expanded research base is enabling the Institute to move research into practice in partnership with industry sectors, as well as individual employers, as illustrated in the examples below:

Control Technology - CDC is developing engineering controls to limit workers' exposure to methylene bisphenyl isocyanate (a highly reactive chemical), prevalent in the emerging truck bed-lining industry. NIOSH is partnering with industry to develop exhaust ventilation and spray enclosure designs for use in this industry and is preparing to disseminate a *NIOSH Alert* – a document to inform workers and employers, small businesses, and the medical community of the prevention techniques.

Exposure Assessment – CDC scientists developed a hand wipe to detect and prevent hazardous exposure to lead. NIOSH has patented, commercially licensed, and disseminated information on this new technology. The Southeast Federal Laboratory

Consortium presented NIOSH with the 2003 Award for Excellence in Technology Transfer for this development.

Emerging Technologies – CDC is working with international researchers to understand the health impact of nanotechnology and is a member of the Nanostructured Science, Engineering and Technology Subcommittee of the National Science and Technology Council Committee on Technology (NSET). By precisely manipulating and engineering matter at a scale of less than 100 nm (approximately one thousandth the width of a human hair), new materials, structures, and devices are being developed and produced that exhibit unique physical, chemical and biological properties. The occupational health risks associated with manufacturing and using these materials are not clearly understood, and CDC's work in this area is critical as this industry begins to grow, and over 2 million new jobs are created.

Interventions, Recommendations and Capacity Building

In addition to conducting research, CDC is committed to translating research findings into effective, preventative information, products, technologies, and practices to be used in the workplace. Mining, construction and agriculture are sectors that consistently lead the Nation in occupational fatalities and injuries. By conducting investigations in these sectors, we are able to identify current hazards and recommend practical, scientifically valid solutions for preventing injuries, illnesses, and fatalities.

Agriculture – Agriculture ranks among the most hazardous industries. Farmers are at high risk for fatal and nonfatal injuries, work-related lung diseases, noise-induced hearing loss, skin diseases, and certain cancers associated with chemical use and prolonged sun exposure. There are approximately 2.2 million farms in the U.S., with 1.2 million people who list their primary occupation as farm operator. In addition,

agriculture employs 1.2 million hired workers and an estimated 3-5 million migrant/seasonal farmworkers. Farming is one of the few industries in which the families (who often share the work and live on the premises) are also at risk for injuries, illness, and death. Farms are often the home and playground for children, and an estimated 104 children younger than age 20 die annually from injuries on U.S. farms and ranches, another 22,648 are seriously injured.

- CDC currently funds 9 Centers for Agricultural Disease and Injury Research, Education, and Prevention and the National Children's Center for Rural and Agricultural Health and Safety. These Centers are distributed across the nation to address the nation's pressing agricultural health and safety problems and to be responsive to the issues unique to the different regions. Based on previous work conducted at the NIOSH Agricultural Center in New York, over 200 farms are participating in the Cornell-based Agricultural Hazard Abatement Training Program. The initial 50 farms that enrolled in the project have reduced their workers compensation claims by 39% over the course of their 4 years of participation.
- CDC-funded researchers in Illinois demonstrated the effectiveness of training workers through peer health advisors, known as Promotores de Salud, and promoted eye safety among Latino farmworkers.

Construction – Construction consistently ranks first among industries as the sector with the highest total number of work-related fatalities. Although construction employs only 6.3% of the workforce, the sector accounts for 20% of the national burden in occupational fatalities. Non-fatal injury rates among construction workers have declined, but remain high in comparison to other sectors.

- CDC investigations of deaths among construction workers indicate that operating cranes beyond their safe lifting capacities places workers at high risk of injury or death. As a result, NIOSH assembled a packet of information documenting crane-related injury risks along with steps that can be taken to prevent these fatal injuries. The packet was mailed to approximately 4,600 crane rental and crane service establishments across the nation as a training tool and support for safety program development. The OSHA Training Institute is using the NIOSH information and training materials in their crane safety courses.
- In partnership with OSHA and MSHA from 1998 to 2000, NIOSH visited 33 worksites in 15 states to gather data on silica exposures, work practices, and engineering controls. NIOSH found that 30 percent of the samples exceeded the NIOSH recommended exposure limit (REL), and 20 percent exceeded the OSHA permissible exposure limit (PEL). The problem was especially acute in construction, where 43% of the samples exceeded the NIOSH REL. NIOSH scientists also found that simple, often commercially available, and common sense controls can effectively reduce exposures, and have worked with partners in industry to implement these cost-effective changes in the workplace.

Mining – CDC research in the mining industry has also been translated into interventions and technologies that have a significant impact on worker illness and injury. Miners face a variety of unique health and safety challenges because of their extreme working environment. The fatality rate for mining has been 5 times higher than other sectors, and injuries to mine workers tend to be more severe than other occupational sectors.

- CDC collaborated with partners from the mining industry and labor to develop a personal dust monitor (PDM). Unlike other monitoring devices, the PDM provides miners with real-time coal dust exposure data. This innovation is the first advancement in monitoring coal miner respirable dust exposure in more than 30 years, and was selected by the Research and Development Magazine as one of the top 100 most significant research and development accomplishments for 2004.
- CDC has also assisted the mine industry in preparing the country's 40,000 miners for underground emergencies, like fires or explosions. In partnership with five mining companies, NIOSH researchers created the Mine Rescue Response Program to plan, conduct, and evaluate evacuation exercises using non-toxic smoke to simulate a real fire. Miners used technologies developed or identified by NIOSH to assist their escape. As a result, several mines are installing directional lifelines in their escape ways and are exploring the purchase of hand held lasers and chemical light sticks.

Emergency Preparedness and Response – Every day across the nation, emergencies occur that threaten our lives and we rely on our local police officers, firefighters, emergency medical technicians, public health professionals, and others to arrive and quickly restore safety and security. These workers face serious hazards on the job, placing them at high risk for work-related injury or death. CDC conducts investigations, disseminates recommendations, and provides training to promote worker safety in this sector. Post 9/11, NIOSH's role in protecting the safety and health of emergency responders has become increasingly important.

Respirator Standard Development and Certification – CDC has been certifying

respirators for use in industry since the 1970s, having issued over 5,200 respirator approvals. OSHA and MSHA require the use of NIOSH-certified respirators in their regulations. Respirators are critical protective devices for workers in emergency response, mining, construction, agriculture, and at times in healthcare, where the work environment can not be modified through engineering controls. According to a recent study conducted jointly with the Bureau of Labor Statistics, approximately 3.3 million workers use NIOSH-certified respirators. After 9/11 and the eminent threat of chemical, biological, radiological and nuclear (CBRN) agents, the need for more effective respirators became increasingly evident. Since 2001, NIOSH has developed standards for four classes of CBRN respirators, and the standards for CBRN respirator retrofit kits. The recent adoption of NIOSH respirator standards by the Department of Homeland Security and the National Fire Protection Associations will likely increase the availability of NIOSH-certified respirators to emergency workers throughout the country.

Fire Fighters - The U.S. depends on approximately 1.1 million fire fighters to protect its citizens and property from losses caused by fire and to respond to other emergencies. In 2004, 107 fire fighters died in the line-of-duty and approximately 80,800 fire fighters sustained nonfatal injuries.

CDC conducts in-depth investigations of the events surrounding fire fighter line-of-duty deaths, which identify contributory factors and steps that can be taken by fire departments and others to prevent future deaths under similar circumstances. During FY 2004, CDC conducted 50 investigations in 29 states and disseminated 40 finalized reports. In total, CDC has completed more than 250 fire fighter line-of-duty-death investigations, involving a diverse array of hazards.

Firefighter fatality investigations have influenced national and state legislation. The federal Hometown Heroes Survivors Act relied, in part, on CDC reports detailing sudden cardiac death triggered by heavy physical exertions during fire suppression. CDC recommendations were also cited in enactment of a 2001 New York law that makes it illegal to use people in the role of victims in live-fire training.

Health Hazard Investigations- CDC conducts health hazard evaluations (HHEs) as required in Section 20 (a) (6) of the Occupational Safety and Health Act and Section 501 (a) (11) of the Federal Mine Safety and Health Act. In response to requests from employers, employees and their representatives, and government agencies, CDC examines workplaces to determine if workers are exposed to hazardous materials or harmful conditions. These evaluations provide a valuable opportunity for CDC to obtain information on occupational exposures where standards are lacking or do not adequately protect all workers. The HHE reports are instrumental in alerting employers, workers, and industry of new or complex workplace hazards and providing them with practical, preventive solutions.

Over the years, CDC has conducted more than 12,000 investigations, involving both emerging occupational health issues such as exposures to Severe Acute Respiratory Syndrome (SARS) among health care workers, and ongoing concerns, such as exposures to metals among workers in the manufacturing sector. In FY 2004 alone, CDC received 418 HHE requests, published 33 formal reports and 242 letter reports conveying guidelines and recommendations.

Information – The U.S workplace is changing rapidly and more than ever before, employers and employees need timely, meaningful information for preventing job related injuries, illnesses, and fatalities. Each year, CDC translates occupational

research findings into various media and resources that provide information for public health policymakers and practitioners, employers, and workers. CDC uses the web to provide timely, far-reaching access to the full range of NIOSH information and publications, and develops numerous printed educational materials that provide targeted populations with targeted information.

Electronic communications are essential in today's society and one of CDC's primary communication tools is "NIOSH eNews." This monthly electronic newsletter is designed to provide NIOSH stakeholders and researchers with a timely update on what's new in worker safety and health. The publication reports on new developments, products, projects, and publications in the Institute. CDC initiated eNews in May 2003 with a baseline readership of roughly 9,000. One year later, eNews has doubled in size, surpassing 20,000 readers and becoming one of the top five listservs at CDC. The newsletter's electronic format is versatile and interactive allowing readers to access other online resources, as well as provide NIOSH with comments and feedback on our performance.

Training and Capacity Building – To meet the national and regional needs for trained safety and health professionals, CDC supports a network of 16 Education and Research Centers (ERCs) and 42 separate Training Project Grants (TPGs) around the country. NIOSH invests $20 million in ERCs and $3 million in TPGs annually. These training programs enroll 1,400 full-time trainees and graduate approximately 500 professionals each year with specialized training in disciplines that include occupational medicine, occupational health nursing, industrial hygiene, occupational safety, occupational injury prevention, and closely related disciplines. In addition, ERCs and select TPGs provide continuing education for occupational safety and health

professional development for 30,000 trainees annually. It is estimated that about half of all U.S. occupational safety and health professionals graduate from CDC-supported programs at the masters and doctoral levels. About 75% of the professionals graduating from CDC-funded programs pursue careers in occupational safety and health.

Conclusion

In conclusion, I appreciate the opportunity to present to you and thank you for your continued support of CDC's NIOSH. I am pleased to answer any questions.